cotyledons, such as Dracaena. Contrary to the usually accepted view, the author finds that cambial activity is present not in the pericycle but in the inner layers of the cortex. Cell divisions in the pericycle are confined to the points where lateral roots make their appearance, and this growth may have been confused by other investigators with the true secondary growth in the cortex. The second part of the paper is devoted to an account of the so-called "Aussenscheide," a zone of more or less thick-walled cells found in the inner cortex of many monocotyledonous roots. This zone is not a real secondary tissue, *i. e.*, produced by the division of meristematic cells, though it may assume the power of secondary growth. This zone is considered to be equivalent to the secondary tissues discussed in the first part of the paper. Several suggestions are offered as to the function of the "Aussenscheide," varying with the habits of the plant in which it occurs. Naturally the mechanical function seems to be the most common one.—M. A. CHRYSLER.

Morphology of Cucumis sativus.—TILLMAN[21] has investigated sporogenesis and embryogeny in the cucumber. The most interesting items reported are as follows: the presence of two integuments that elongate greatly and invest the remarkable beak-like prolongation of the nucellus; the somewhat irregular development of the embryo; and an haustorial enlargement of the pollen tube on its passage through the long nucellar beak. The fusion of the unequal polar nuclei was seen, but no case of double fertilization was observed.—J. M. C.

Enzymes of Polyporus.—BULLER[22] finds in the juice of *P. squamosus* the following: laccase, tyrosinase, amylase, emulsin, a protease, lipase, rennetase, and coagulase; but negative results were obtained by tests for pectase, maltase, invertase, trehalase, and cytase. Yet the fact that it destroys the wood of *Acer pseudoplatanus* indicates the presence of cytase and possibly hadromalase.—C. R. B.

Limiting factors.—An illuminating paper on *Optima and limiting factors* has been published by Dr. F. F. BLACKMAN,[23] which it behooves every physiologist to read. The argument shows, and it is sustained by the results of research, that much physiological experimentation has been falsely interpreted.—C. R. B.

Photosynthesis extra vitam.—MACCHIATI replies[24] to BERNARD,[25] criticizing his methods, maintaining that photosynthesis does occur *in vitro*, and stating certain modifications of the process. He makes a weak case.—C. R. B.

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[21] TILLMAN, OPAL I., The embryo sac and embryo of *Cucumis sativus*. Ohio Nat. **6**:423–430. *pls. 29–30*. 1906.

[22] BULLER, A. H. R., The enzymes of *Polyporus squamosus* Huds. Annals of Bot. **20**:50–59. 1906.

[23] Annals of Botany **19**:281–295. 1905.

[24] MACCHIATI, L., Altri fatti e nuovi argomenti sull' assimilazione fotosintetica fuori dell' organismo dopo le richerche del dig. Dr. Ch. Bernard. Nuovo Giorn. Bot. Ital. **12**:461–468. 1905.

[25] BOT. GAZETTE **41**:157. 1906.